
DISTRIBUTION AND STATUS OF THE CARPENTARIAN GRASSWREN *AMYTORNIS DOROTHEAE*

John L. McKean¹ and Keith C. Martin²

¹ c/- 46 Worongary Rd. Tallai, Qld 4213

² P.O. Box 40396, Casuarina, N.T. 0811

Summary

The distribution and status of the Carpentarian Grasswren *Amytornis dorotheae* is reviewed following a recent field survey. Three new locality records are given, including the first records for Queensland. One population appears to have declined because of the frequent and extensive burning of its habitat. Factors likely to affect the future status of this bird are briefly outlined.

Introduction

The Carpentarian Grasswren *Amytornis dorotheae* is a small passerine bird of the family Maluridae, inhabiting the spinifex-covered hillsides of the south-western Gulf of Carpentaria region in northern Australia. The species is listed as an endangered vertebrate by Burbidge and Jenkins (1984).

Because of the remote and inhospitable nature of its habitat, coupled with the cryptic nature of the species, there have been few recorded sightings or collections of this bird. Virtually nothing is known of its biology or population size. Consequently, there has been mounting concern in recent years over its status and future survival, particularly in the face of changing land usage and burning practices in the area.

In 1986, the Northern Territory Heritage Grants Program committed funds to the Conservation Commission of the Northern Territory to review the past known distribution, current status, and habitat requirements of the species, including a field survey of the bird's present distribution, extent of suitable habitat and factors affecting the continued survival of the species.

This paper details some of the findings of the field survey, after summarizing the existing knowledge available on the Grasswren's distribution and status.

Historical Background

First recorded sightings of the Carpentarian Grasswren were made by G. F. Hill, ornithologist to the Barclay Expedition (Hill 1913). He reported finding a species of grasswren which he thought may have been the White-throated Grasswren *Amytornis woodwardi* and described it as "fairly numerous in the porcupine-grass and rocks in the ranges near Borroloola" (Hill 1913).

H.L. White, a private collector from Scone, N.S.W., sent H.G. Barnard on a six month long collecting expedition to the Borroloola area in 1913, during which time he managed to collect six specimens (all males) of *A. dorotheae* and two nests (Barnard 1914a,b; White 1914, Appendix A). All except one bird and the two nests were collected near the junction of the Glyde and Macarthur Rivers. The locality of the sixth specimen and the nests is given simply as "Borroloola, Macarthur River, N.T.", and the precise origin of these specimens, and Hill's original observations, are unknown. White sent specimens to G.M. Mathews in England who described them as a new subspecies *dorotheae* of *Amytornis woodwardi* (Mathews 1914). Later Mathews (1917) realized that the differences between *dorotheae* and *woodwardi* were so great that the Carpentarian Grasswren should be elevated to a full species.

Nothing further was reported of the bird for nearly 60 years until H. R. Officer, H.B. Gill and K. Gill rediscovered the species in the same general area as Barnard had originally collected it (Officer 1972). The bird has subsequently been seen in this locality by various workers.

In June 1974, T.O. Wolfe and R. Schodde discovered a population of Carpentarian Grasswrens in the southern footslopes of the China Wall, near the Queensland border (Schodde 1982). No further reports of the species in this area have since been made.

Then, in 1981, Carpentarian Grasswrens were discovered by S. Garnett and others on a sandstone escarpment some 40 km west of Borroloola. The birds have been located subsequently in this location many times by J. L. McKean, J. & J. Whitaker and others.

Methods

A field survey in the south-western Gulf of Carpentaria region was completed during May/June 1986. The survey broadly covered the area from the Limmen Bight River, N.T. in the west, to Cliffdale Creek, Qld. in the east, concentrating on the sandstone range country and including the Tawallah Range, Bukalara Range, the Upper Foelsche and Robinson Rivers, the Calvert River and Calvert Hills, the China Wall and range country in the Westmoreland/Cliffdale Creek areas of Queensland.

The sites where the Grasswren had been previously recorded were visited to establish whether the species still persisted there. In addition, nine other accessible areas which appeared to hold suitable habitat were investigated. Advice was also sought from local residents on the occurrence of the bird. Many other areas were also inspected, but were not searched thoroughly as they did not contain suitable habitat. Table 1 gives details on the intensively searched sites. In all areas traversed, the habitat suitability for the Grasswren was evaluated, taking into

account the rock formations, extent of the habitat and the recent fire history.

Once a site had been reached where habitat appeared suitable, it was searched systematically for the presence of Grasswrens. Search techniques involved traversing the area, and occasionally sitting quietly at good vantage points watching and listening intently for the bird, particularly in the vicinity of spinifex-covered rock outcrops. Records of vocalizations were reinforced by sight observations where possible and spinifex clumps were searched for old nests.

Searches were abandoned if the bird could not be located after a thorough search of all, or a large part of the available habitat was made, and the consensus was that further effort in the area was not warranted. Up to 16 man hours of search effort were required to establish the bird's presence at some localities as it is extremely difficult to locate, even under the best conditions.

Table 1 . Sites searched for Carpentarian Grasswren *Amytornis dorotheae*.

Location	Dates	Man Hours	Remarks
Bukalara Range (North), Narwinbi Aboriginal Land, N.T. 16° 26'S, 136° 08E	14.3.1986	24	Known site, species still present, at least 5 pairs
Glyde River, Bukalara Range (South), Macarthur River Station, N.T. 16° 55'S, 136° 08'E	23-24.5.1986	7	Known site, species still present at least 1 pair, old nest discovered.
Quaker Yard, Robinson River Station, N.T. 16° 55'S, 135° 40'E	25-26.5.1986	9	Not recorded.
Lagoon Creek Gorge, Westmoreland Station, Q. 17° 32'S, 138° 02'E	27-28.5.1986	14	New locality, first record for Queensland, at least 2 pairs.
Fish River Gorge, China Wall. Nicholson River Aboriginal Land, N.T. 17° 46'S, 137° 48'E	29.5.1986	6	Not recorded.

Table 1 cont.

Abandoned Tin Mine, China Wall, Nicholson River Aboriginal Land, N.T. 17° 44'S, 137° 48'E	30.5.1986	8	Known site, species still present, at least 1 pair.
Hells' Gate, Cliffdale Creek Station Q. 17° 33'S, 138° 19'E	31.5.-1.6 1986	16	New locality, at least 3 pairs.
Blackfella Springs, Calvert Hills Station, N.T. 17° 21'S, 137° 05'E	2.6.1986	4	Not recorded.
Bluey Creek, Calvert Hills Station, N.T. 17° 07'S, 137° 16'E	3.6.198	2	Not recorded.
Calvert River Jumpup, Pungalina Station, N.T. 16° 30'S, 137° 25'E	4.6.1986	3	Not recorded.
Tawallah Range, Billengarra Station, N.T. 16° 09'S, 135° 37'E	5.6.1986	6	New locality, at least 1 pair.
Butterfly Springs, Nathan River Station, N.T. 15° 37'S, 135° 27'E	6.6.1986	7	Not recorded.

Results and Discussion

Carpentarian Grasswrens were located at six of the twelve sites investigated. Three of these are new locality records and represent range extensions to the west and to the east, including new state records for Queensland. It was particularly disappointing not to be able to locate any birds in the area between Borroloola and the China Wall where the areas visited were either not suitable or had been badly burnt out. However, we believe that the species may still exist in this area as much of it is inaccessible to vehicles.

Based on our surveys at known and new localities the habitat requirements of the Carpentarian Grasswren are large mature stands of spinifex, either *Plectrache pungens* or *Triodia pungens*, growing on dissected sandstone plateaux or slopes.

Scattered trees, particularly *Eucalyptus dichromophloia* and shrubs such as *Acacia* spp. are generally present, but are not essential. Tumbled rocks and surface cracking of the sandstone which provide recesses and clefts in which the bird often shelters, are an essential feature of the habitat.

To date, the species has only been found on rock types of the Paleozoic Adelaidean System (Bukalara Sandstone; Cox Formation) and the Pre-Cambrian Carpentarian System (Tawallah Group). However there are large tracts of these sandstone formations in the Gulf region which do not contain suitable Grasswren habitat.

Most historical and modern records of the Grasswren have come from the Bukalara Ranges. There is an abundance of excellent habitat along the Glyde and Macarthur Rivers but the species so far has only been located at two sites there. Based on the observations of J.L. McKean and J. Whitaker over the past five years the northern site holds at least five pairs and is the largest population known, although other areas have sufficient habitat to hold similar numbers or even more.

At the China Wall, the evidence suggests that the species was far more common in 1974, when they were initially discovered, than they are today. This is apparently due to the intensive burning regime in effect at present (McKean pers. obs.). It is likely that most populations on small, less than ideal sandstone areas have already disappeared because of a lack of refuge areas in which to escape fires.

It is difficult to assess accurately whether or not the species has suffered a serious decline in recent years because even in sites of known populations, the species is frequently difficult to find. Many recent observers have spent days in the Bukalara Range area where there are known territories, without sighting the species. The Harold Hall Expedition of 1968 failed to locate the bird after ten days in the area (Officer 1972) and even Barnard himself searched the Glyde River for two days in 1913 before locating the (now) type specimen.

The status of populations at the three new recorded localities is unknown. The possibility exists that the Grasswren occurs further south and east of the new localities. One prospect is the Lawn Hill National Park where other "Top End" endemics such as the Sandstone Shrike Thrush *Colluricincla woodwardi* and the Rock Ringtail Possum *Pseudocheirus dahli* have been recently discovered. Despite recent searches of suitable habitat by visiting birders and the resident ranger, the Carpentarian Grasswren has not yet been seen in the area. Another promising potential locality is in the sandstone of the upper Foelsche River.

The greatest threat to the continued existence of the Carpentarian Grasswren is the extent and frequency of fires in the sandstone ranges. The best chance for survival of this species is in the areas where there is extensive habitat with natural firebreaks. Such an area would never be totally burnt out, and fires entering the site

would be patchy and leave numerous refuge areas. There are two areas which we feel offer such extensive habitat and natural firebreaks that, under careful management, could maintain viable populations of the species indefinitely. The two areas are the Bukalara Range, N.T. and the Lagoon Creek Gorge/Hells Gate area, Qld.

Apart from fire, there are few management problems facing the Grasswren. Feral cats *Felis catus* may create unnatural predatory pressure on this species although none were seen during the course of the survey. The habitat is usually too inhospitable for most of the large introduced mammals such as cattle, buffalo, donkey and pigs.

There is some mining and exploration activity in the region, particularly in the Macarthur River valley, Calvert Hills and Wollogorang. The region has substantial mineral reserves of silver/lead/zinc, tin, uranium, copper and others. Thus, mining activities have the potential to affect adversely Grasswren populations and need monitoring.

Already many birders visit the region specifically to see the Carpentarian Grasswren. Tourism in the region has increased dramatically in the past few years coinciding with an upgrading of the road conditions and facilities available. At present the sandstone country is rarely visited by tourists even though much of it is scenically spectacular as well having an interesting flora and fauna. In areas where the Grasswren occurs recreational pursuits will need to be controlled.

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Appendix A

Amytornis dorotheae specimens currently held in research collections.

Museum*	Reg. No.	Sex	Date Coll.	Collector	Locality	Remarks
AMNH	598138	M	24/9/13	H. G. Barnard	McArthur Stn McArthur R. N.T.	Holotype (Mathews' collection #18427)
AMNH	598139	M	24/9/13	H. G. Barnard	McArthur Stn McArthur R. N.T.	(Mathews' collection #18428)
NMV	HLW.2739	M	24/9/13	H. G. Barnard	McArthur Stn McArthur R. N.T.	Co-Type Emu 27:32
NMV	HLW.2740	M	24/9/13	H. G. Barnard	"	
NMV	HLW.2741	M	24/9/13	H. G. Barnard	"	
NMV	HLW.2742	M	7/12/14	H. G. Barnard	Borrooloola. McArthur R. N.T.	
NWC	17285	M	6/6/74	T. O. Wolfe	China Wall, N.T.	Exchanged. Now in AM
NWC	17389	F	12/6/74	T. O. Wolfe	"	"
NWC	17296	M	7/6/74	T. O. Wolfe	"	
NWC	17316	F	8/6/74	T. O. Wolfe	"	
NWC	17317	F	8/6/74	T. O. Wolfe	"	
NWC	17388	F	12/6/74	T. O. Wolfe	"	
NWC	18341	M?	31/1/76	I. J. Mason	Glyde River, Bukalara Range N.T.	
NWC	18342	F	31/1/76	I. J. Mason	"	

* AMNH, American Museum of Natural History, New York

NMV, National Museum of Victoria, Melbourne

NWC, National Wildlife Collection, Canberra

AM, Australian Museum, Sydney